Case study of SIRDS algorithms based autostereoscopic image

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The environment around us is the world of three-dimension (3D); i.e. the position of everything is precisely described by its coordinates in the three-dimensional Descartes systems. However, up to now the two-dimensional (2D) presentation of objects is still deployed in most of image processing applications, which tend to simulate, to reconstruct the real world at the maximum level of reality. Obviously such methods with reduction in dimension cause data-loss, but they are still dominated because of their simplicity and portability. Recently the drastical development of computer and hardware manufacturing makes 3D displaying system (therefore application) possible at a quite "reasonable" price. A lot of prospective results emerged in this field but the question to looking for the displaying method with the best trade-off between the reality of 3D world and complexity viability is till open for researchers.

This paper provides a deep study for a displaying method based on SIRDS (Single Image Random Dots Stereogram) algorithms, which can be considered as a good solution for the mentioned question. What SIRDS algorithms is, how to display a SIRDS based image, its limit and visibility are discussed in this paper. Besides helping readers have a comprehensive view throughout different programming techniques of SIRDS implementations, it proposes a new one to overcome some limits of predecessors. Some practical trials toward a new aspect of SIRDS - applied to motion objects – are also take into account in the frame of this paper.

References

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